

ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	EJOT Baubefestigungen GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-EJO-20210059-IBD1-EN
Issue date	01/10/2021
Valid to	08/07/2026

Flat roof fastening systems **EJOT Baubefestigungen GmbH**

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max. 4 MB

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1. General Information

EJOT Baubefestigungen GmbH

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number

EPD-EJO-20210059-IBD1-EN

This declaration is based on the product category rules:

Wall plugs made of plastic and metal, 30.11.2017
(PCR checked and approved by the SVR)

Issue date

01/10/2021

Valid to

08/07/2026



Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)



Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.)

Flat roof fastening systems

Owner of the declaration

EJOT Baubefestigungen GmbH
In der Stockwiese 35
57334 Bad Laasphe

Declared product / declared unit

This declaration describes a hypothetical, general average flat roof fastening system (screw and stress plate or anchor sleeve) of total length 200 mm for the mechanical securing of 1 m² flat roof superstructures, consisting of three individual systems.

Scope:

This declaration is valid for all fastening combinations mentioned in the European Technical Approval ETA 07-0013, which are manufactured in the plants in Germany (Berghausen) and Poland (Ciasna) of EJOT Baubefestigungen GmbH. The data basis is the year 2012. The declared results apply to a length of 200 mm, for all other lengths the results can be extrapolated with the formula given in chapter 5.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of *EN 15804+A2*. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard *EN 15804* serves as the core PCR

Independent verification of the declaration and data according to *ISO 14025:2010*

☐ internally ☒ externally



Juliane Franze
(Independent verifier)

2. Product

2.1 Product description/Product definition

The flat roof fastening system is formed by combinations of the screws with stress plates made of metal or plastic or plastic anchor sleeves with pre-assembled screw.

This declaration describes a hypothetical, general flat roof fastening system of the total length 160mm/200mm/240mm and is thus valid for all fastening combinations mentioned below that may be used according to European Technical Approval *ETA 07-0013* for the mechanical securing of flat roof structures against wind suction forces.

If total lengths other than those listed above need to be calculated, interpolation is possible.

Product definition: *Regulation (EU) No 305/2011*(CPR) applies to the placing on the market of the product in the EU/EFTA (with the exception of Switzerland). The product requires a declaration of performance under

consideration of *ETA 07/0013* entitled "*Fastening Elements for Roof Waterproofing Membrane Systems* and the CE marking.

The respective national regulations apply to the use.

2.2 Application

Flat roof fastening systems from EJOT Baubefestigungen GmbH are used to mechanically secure vapour barriers, insulation materials and roof membranes against dynamically occurring wind suction forces on the anchoring bases of trapezoidal sheet metal, concrete, lightweight and aerated concrete, wood and wood-based materials.

2.3 Technical Data

Constructional data

Name	Value	Unit
Screw diameter	4.8 - 8	mm
Length spectrum	25 - 605	mm
Plate diameter	40 - 82	mm
Anchoring depth	20 - 65	mm
Characteristic tension resistance	8.6 - 2.61	kN

See ETA 07-0013 according to ETAG 006

The performance values of the product correspond to the declaration of performance with regard to its essential characteristics according to *ETA 07/0013* "Fastening elements for roof waterproofing membrane systems".

2.4 Delivery status

Depending on the type of flat roof fastening system and customer requirements, the items are supplied as individual components or as an assembled unit ready for installation.

The packaging units vary in a range from 100 to 2000 pieces.

2.5 Base materials/Ancillary materials

The main raw materials and primary products for the flat roof fastening systems of EJOT Baubefestigungen GmbH are:

- Steel / stainless steel (approx. 74 %)
- Polyethylene (approx. 15 %)
- Polyamide (approx. 10 %)
- Dyes (approx. 1 %)

The plastic granulate contains auxiliary materials and additives. In the EJOT production companies, no auxiliary materials and additives are used in production.

The product contains substances on the *ECHA list* of Substances of Very High Concern (SVHC) (date 19.01.2021) above 0.1% by mass: no.

The product contains other CMR substances of category 1A or 1B not on the candidate list above 0.1% by mass in at least one sub-product: no.

2.6 Manufacture

The plastic anchor sleeves are produced using conventional injection moulding techniques. For this purpose, an injection moulding machine is used to plasticise the respective plastic in an injection unit and inject it into an injection mould.

The cavity of the tool determines the shape and surface structure of the finished part (here plastic anchor sleeve or plastic stress plate).

Screws: The vast majority of screws and fasteners are produced by non-cutting cold forming. The cold extrusion process: The starting material is delivered as "wire" wound on spools and uncoiled, straightened and, if necessary, reduced to the desired diameter in equipment upstream of the presses. Modern cold extrusion presses work in several stages, i.e. several operations are linked in succession per stroke, e.g. preforming the screw head, upsetting, deburring and reducing the threaded part. In the subsequent process, the threads are rolled onto the reduced threaded parts by thread rolling machines with flat dies or rolling and

segment tools without cutting. Preferably, cold extrusion presses with integrated thread rolling machines are used.

EJOT Baubefestigungen GmbH is certified according to *ISO 9001*.

2.7 Environment and health during manufacturing

Strict safety and risk reduction measures are observed in the EJOT production facilities. Heat emissions from the granulate during the production process are discharged in a controlled manner through a ventilation system, thus guaranteeing a constant exchange of air during the production process.

EJOT Baubefestigungen GmbH is certified according to *ISO 14001* environmental management systems (certificate - registration number 302825 UM).

2.8 Product processing/Installation

EJOT flat roof fastening systems can only be processed with the help of appropriate hand machines, such as impact drills and screwdrivers (possibly in combination with special EJOT setting tools).

Depending on the anchoring base, pre-drilling is necessary in advance of installation in solid building materials such as concrete and lightweight concrete.

The necessary expansion for firm anchoring is then created in the resulting drill hole, e.g. using a plastic anchor sleeve with screw (push-through installation).

This is not necessary for the anchoring substrates trapezoidal sheet metal, aerated concrete, wood and wood-based materials. Here, special screw geometries ensure secure anchoring of the fastener without a pre-drilling process.

Flat roof fastening systems from EJOT Baubefestigungen GmbH can - also depending on the anchoring base - be fastened manually or mechanically using automatic setting machines specially designed for the flat roof fastening system.

EJOT Baubefestigungen GmbH refers to the information provided by the manufacturers of these hand-held machines in the operating licences on the use as intended as well as the environmental protection and disposal instructions.

2.9 Packaging

Cartons in article and quantity-specific dimensions are used for packaging.

Transport to the customer is stacked, on wooden pallets that are reused as circulation pallets.

2.10 Condition of use

If the flat fastening systems are used as intended, there will be no changes in the material composition during the service life.

2.11 Environment and health during use

When used properly, there is no effect relationship between the product and the environment or health

2.12 Reference service life

The assumed service life of flat roof fastening systems is 10 years according to *ETAG 006*. According to *ETA 07-0013*, no warranty claims can be derived from this service life. This information is only to be regarded as an aid to selecting the correct product with regard to the economically appropriate service life of the structure.

2.13 Extraordinary effects

Fire

Flat roof fastening systems must meet the fire behaviour requirements according to *ETAG 006*.

Fire Protection

Name	Value
Building material class	-
Burning droplets	-
Smoke gas development	-

Water

In the case of stress plates and plastic systems, exposure to water has no effect on the environment. The special screws used have an increased corrosion resistance according to the requirements of *ETAG 006* or are made of austenitic stainless steels according to *EN 10088-1*.

Mechanical destruction

No hazardous substances are released if the product is mechanically destroyed.

2.14 Re-use phase

An after-use phase is not provided for flat roof fastening systems.

2.15 Disposal

If the flat roof surface is dismantled, it is theoretically possible to separate the individual components from each other. In practice, the complete roof structure - including the flat roof fastening systems - is deposited. The individual components of the flat roof fastening system are assigned to the following waste codes in accordance with the Waste Catalogue Ordinance (AVV) and the European Waste Catalogue (EWC):

- EWC 17 02 03 - Plastics
- EWC 17 04 05 - Iron and steel

2.16 Further information

www.bau.ejot.de

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is an average system for fixing 1 m² of flat roof with a specific length of 200 mm, consisting of three individual systems.

"Average" describes all fastening types of the system produced on average according to production shares weighted on the basis of a parameter analysis. This means that a hypothetical fastening system is calculated that represents the entire flat roof fastening system. In order to convert the declared unit to kg, the weight per system is given.

Declared Unit

Name	Value	Unit
Declared unit	3	Pce/m ² _{syste} m
Conversion factor to 1kg	10.256	-
conversion factor [Mass/Declared Unit]	975	-

3.2 System boundary

Type of EPD: Cradle to factory gate - with options. The environmental product declaration refers to the production stage (module A1-A3), the disposal stage (modules C1-C4) as well as credits and loads outside the system boundary (module D).

In the production stage, the procurement of raw materials including the corresponding upstream chains, the necessary procurement transports to the plants and the energies required for the production of the fastening systems are considered.

The country-specific electricity mix was modelled for each of the plants. The material composition and energy demand of the declared fastening systems were calculated according to their production shares in each plant.

In the disposal phase, the dismantling of the fastening systems (module C1), the transport to waste treatment (module C2), the waste treatment (module C3) and the

landfilling of the plastics (module C4) are considered. Avoided loads from the recycling of metals are considered in Module D.

For this purpose, only the net scrap quantities are considered.

3.3 Estimates and assumptions

As no quantitative information on the end-of-life of the fastening system is available, it was assumed that the components will be separated and landfilled (plastics) or recycled (metals) after demolition.

The use of water during the production phase was not taken into account in the model, as it is a cycle of cooling water.

3.4 Cut-off criteria

The EJOT company provided the data from the operational data collection, which contains all input goods, as well as all available emission measurements for the LCA and took them into account in the model accordingly.

Thus, material flows with a share of less than 1 % were also accounted for. It can be assumed that the sum of the neglected processes does not exceed 5 % of the impact categories.

3.5 Background data

In principle, the background database *GaBi* in the latest version 9.5 (Service Pack 40) was used. The available data sets also support the evaluation period of 100 years with regard to potential environmental impacts. The consistent data sets contained in the *GaBi* database are documented online.

3.6 Data quality

The primary data were provided by the company EJOT Baubefestigungen GmbH and checked for plausibility. The quality and representativeness of the foreground data collected can therefore be considered high. The data quality of the background data used was rated as good in terms of technical, geographical and

temporal representativeness. The majority of the background data used is from the reference year 2019.

3.7 Period under review

The data basis for this LCA is based on data collected by EJOT in 2012. The period under consideration is 12 months.

3.8 Allocation

The total production of EJOT GmbH includes other products in addition to the product under consideration. The values for thermal and electrical energy as well as auxiliary materials were related accordingly to the product groups to be declared during data collection. This division was carried out according to mass. Accumulating production waste (e.g. packaging waste of raw materials) is fed into an energy recovery

process. The resulting electrical and thermal energy is accounted for within module A1-A3. The thermal energy released during thermal waste incineration can be considered equivalent to the thermal process energy required.

3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The background database used is *GaBi 9.5*, Service Pack 40.

4. LCA: Scenarios and additional technical information

Characteristic product properties

Information on biogenic Carbon

The total biogenic carbon content of the packaging materials (0.0785 kg) is 0.0382 kg. The cardboard packaging has a biogenic carbon content of 43 % (0.00672 kg biogenic carbon), for the wooden pallets a biogenic carbon content of 50 % (0.0315 kg biogenic carbon) was assumed.

The following technical information is the basis for the declared modules or can be used for the development of specific scenarios in the context of a building assessment.

End of life journey (C1–C4)

Name	Value	Unit
Collected separately waste type	-	kg
Collected as mixed construction waste	0.0975	kg
Reuse	-	kg
Recycling	0.0726	kg
Energy recovery	-	kg
Landfilling	0.0248	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Steel scrap (net)	0,0705	kg
Collection rate	100	%
Recycling losses	3	%

5. LCA: Results

In the following, the results of the indicators of impact assessment, resource use, waste and other output flows are presented.

EP-freshwater: This indicator was calculated as "kg P-eq." in accordance with the characterisation model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; <http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml>)).

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	ND	ND	ND	ND	MNR	MNR	MNR	ND	ND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 3 pieces/m2 average flat roof fastening systems of 200 mm length

Core Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Global warming potential - total	[kg CO ₂ -Eq.]	4.91E-1	2.56E-3	6.58E-4	2.55E-4	1.74E-3	-1.23E-1
Global warming potential - fossil fuels	[kg CO ₂ -Eq.]	4.91E-1	2.54E-3	6.53E-4	2.53E-4	1.74E-3	-1.23E-1
Global warming potential - biogenic	[kg CO ₂ -Eq.]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
GWP from land use and land use change	[kg CO ₂ -Eq.]	3.13E-4	2.07E-5	5.33E-6	1.73E-6	1.41E-6	3.50E-6
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.75E-11	4.69E-19	1.21E-19	6.14E-19	3.95E-18	2.68E-16
Acidification potential, accumulated exceedance	[mol H ⁺ -Eq.]	1.11E-3	1.29E-5	4.02E-6	2.49E-6	5.27E-6	-2.73E-4
Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg PO ₄ -Eq.]	1.18E-6	7.78E-9	2.00E-9	7.38E-10	3.19E-7	-6.95E-8
Eutrophication, fraction of nutrients reaching marine end compartment	[kg N-Eq.]	2.81E-4	6.13E-6	1.94E-6	1.21E-6	1.17E-6	-4.99E-5
Eutrophication, accumulated exceedance	[mol N-Eq.]	2.89E-3	6.80E-5	2.15E-5	1.33E-5	1.28E-5	-5.05E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	8.59E-4	1.25E-5	3.75E-6	3.52E-6	3.81E-6	-2.06E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	1.32E-5	2.06E-10	5.32E-11	2.77E-10	1.18E-10	-1.99E-6
Abiotic depletion potential for fossil resources	[MJ]	6.52E+0	3.41E-2	8.78E-3	4.95E-3	2.50E-2	-1.06E+0
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m ³ world-Eq deprived]	1.77E-2	2.49E-5	6.42E-6	4.88E-5	-1.95E-5	-9.25E-3

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 3 pieces/m2 average flat roof fastening systems of 200 mm length

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	9.53E-1	1.97E-3	5.08E-4	3.57E-4	1.76E-3	8.18E-2
Renewable primary energy resources as material utilization	[MJ]	1.67E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	1.12E+0	1.97E-3	5.08E-4	3.57E-4	1.76E-3	8.18E-2
Non-renewable primary energy as energy carrier	[MJ]	5.80E+0	3.42E-2	8.82E-3	7.33E-1	2.50E-2	-1.06E+0
Non-renewable primary energy as material utilization	[MJ]	7.28E-1	0.00E+0	0.00E+0	-7.28E-1	0.00E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	6.53E+0	3.42E-2	8.82E-3	4.95E-3	2.50E-2	-1.06E+0
Use of secondary material	[kg]	6.04E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.26E-2
Use of renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m ³]	1.04E-3	2.30E-6	5.92E-7	1.39E-6	3.07E-7	-2.17E-4

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 3 pieces/m2 average flat roof fastening systems of 200 mm length

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	[kg]	1.42E-8	1.58E-9	4.08E-10	1.30E-10	9.12E-11	-1.35E-7
Non-hazardous waste disposed	[kg]	4.51E-3	5.42E-6	1.40E-6	1.34E-6	2.40E-2	1.26E-2
Radioactive waste disposed	[kg]	1.07E-4	6.30E-8	1.62E-8	6.54E-8	3.01E-7	3.75E-8
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	0.00E+0	0.00E+0	0.00E+0	7.26E-2	0.00E+0	0.00E+0
Materials for energy recovery	[kg]	2.08E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 3 pieces/m2 average flat roof fastening systems of 200 mm length

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Potential incidence of disease due to PM emissions	[Disease Incidence]	ND	ND	ND	ND	ND	ND
Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	ND	ND	ND	ND	ND	ND
Potential comparative toxic unit for ecosystems	[CTUe]	ND	ND	ND	ND	ND	ND
Potential comparative toxic unit for humans - cancerogenic	[CTUh]	ND	ND	ND	ND	ND	ND
Potential comparative toxic unit for humans - not cancerogenic	[CTUh]	ND	ND	ND	ND	ND	ND
Potential soil quality index	[-]	ND	ND	ND	ND	ND	ND

The additional indicators according to EN 15804+A2 are optional. The indicators are not shown in the EPD ("ND").

Disclaimer 1 - applies to indicator IRP

This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 - applies to indicators ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc, SQP

The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

As the raw materials at the production stage are the main contributors to the LCA results, there is a linear relationship between the weight of the raw materials (and thus the length of the systems, as the density remains the same) and the environmental impact. So for other results of other lengths, please use the following formula:

$$P(x) = [P(x1)/x1] * x$$

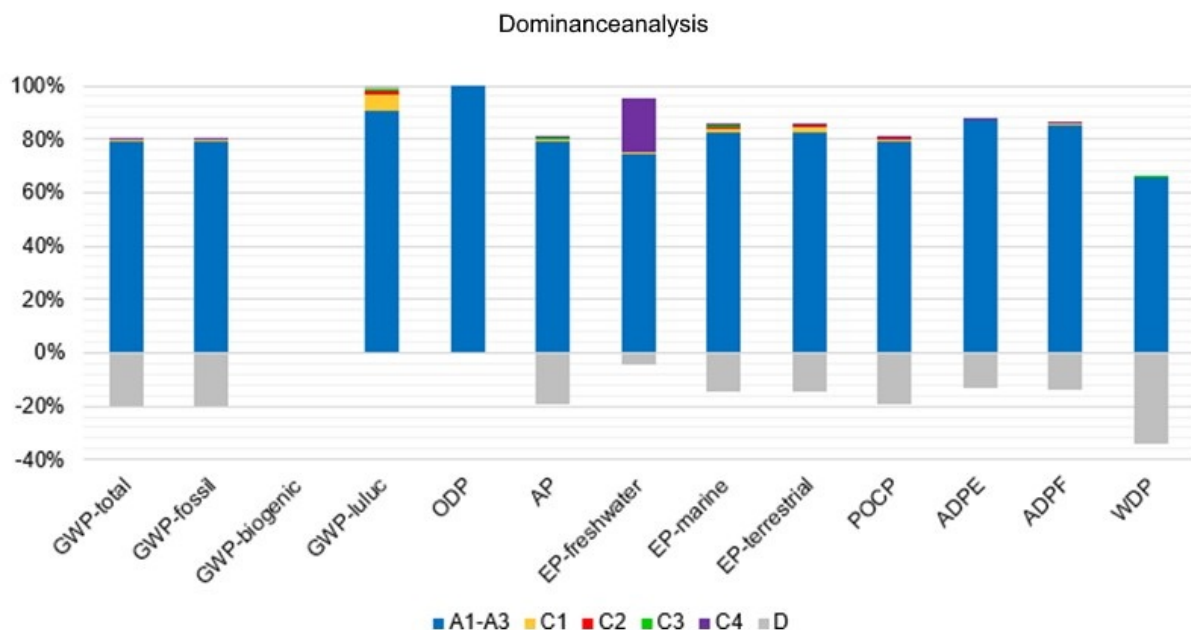
P(x): Indicator for the new fastening system to be declared

P(x1): Indicator of the declared product (e.g. Global Warming Potential (GWP) of the fastening system).

x: Length of the new fastening system to be declared [mm] (e.g. 240 mm)

x1: Length of the declared fastening system [mm] (here 200 mm)

6. LCA: Interpretation



All indicators are significantly dominated by the production stage and the material and energy upstream chains (modules A1-A3). In modules A1-A3, the screws and the production of the plastic elements

in particular contribute to the potential environmental impacts. The benefits and burdens in

Module D result from the steel credits from steel recycling at the end of the life cycle.

The main influences in the manufacturing phase (module A1-A3) are shown below.

The Global Warming Potential fossil (GWP-fossil) is dominated by the production of plastic elements (49 %) and screws (32 %).

The stratospheric ozone depletion potential (ODP) is dominated by the production of the plastic elements (99 %).

The acidification potential of soil and water (AP) is dominated by the screws (41 %) and the plastic elements (33 %).

Eutrophication potential freshwater (EP-freshwater) is dominated by packaging materials (35 %) and the production of plastic elements (27 %).

Saltwater eutrophication potential (EP-marine) is most influenced by the screws (39 %) and the production of the plastic elements (35 %).

Eutrophication potential land (EP-terrestrial) is dominated to 40 % by the screws and to 33 % by the production of the plastic elements.

The formation potential for tropospheric ozone (POCP) is also dominated by the screws (39 %) and the plastic elements (35 %).

Screws contribute to 59 % of the potential for depletion of abiotic resources - non-fossil resources (ADPE). The metal stress plates have a share of 41 %.

The potential for the depletion of abiotic resources - fossil fuels (ADPF) will be dominated by the production of plastic elements (60 %) and screws (23 %).

The use of renewable primary energy (PERT) is mainly due to cardboard packaging materials (41%).

Non-renewable primary energy (PERT) is mainly used in the upstream chains of plastics.

The flat roof fastening system is formed by combinations of the screws with stress plates made of metal or plastic or plastic anchor sleeves with pre-assembled screw.

This declaration describes a hypothetical general flat roof fastening system of total length 200mm.

Due to the variability of the materials and thus also the manufacturing processes as well as the length of the fastening systems, there are deviations in the LCA results around the average. Linear extrapolation is permissible for lengths not shown (see Chapter 5). If the material composition deviates from the average, the LCA results may deviate from the average.

7. Requisite evidence

No evidence is required according to PCR Part B.

8. References

Normen

EN 15804

EN 15804:2019-04+A2 (in press), Building Sustainability – Environmental Product Declarations – Basic Rules for the Product Category of Building Products

EN 10088-1

DIN EN 10088-1:2014-12; Stainless steels - Part 1: List of stainless steels; German version EN 10088-1:2014.

ISO 9001

DIN EN ISO 9001:2015-11, Quality management systems - Requirements (ISO 9001:2015); German and English version EN ISO 9001:2015.

ISO 14001

ISO 14001:2015-09, Environmental management systems - Requirements with guidance for use.

ISO 14025

ISO 14025:2006-07, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

Weitere Literatur

AVV

Abfallverzeichnis-Verordnung (AVV) of 10 December 2001 (BGBl. I p. 3379), last amended by Article 1 of the ordinance of 30 June 2020 (BGBl. I p. 3005).

EWC

European Waste Catalogue, List of Wastes ordinance of 10 December 2001 (BGBl. I p. 3379), last amended by Article 1 of the ordinance of 30 June 2020 (Federal Law Gazette I p. 1533).

ECHA list

List of products eligible for authorisation Substances of Very High Concern (ECHA Candidate List), dated 19.01.2021, published in accordance with Article 59(10) of the REACH Regulation. Helsinki: European Chemicals Agency.

ETAG 006

Guideline ETAG No 006 Mechanically fastened flexible roof waterproofing membranes.

ETA

European Technical Approval or European Technical Assessment (ETA) of the respective products.

ETA 07-0013

Fasteners for flexible roof waterproofing membrane systems; holder of approval: EJOT Baubefestigungen GmbH.

GaBi

Software und Datenbank zur Ganzheitlichen Bilanzierung (GaBi), Version 9.5, Servicepack 40. LBP [Chair of Building Physics] University of Stuttgart and thinkstep AG, LeinfeldenEchterdingen, 1992 - 2020.

Product category rules for construction products**Part A**

Part A: Calculation rules for life cycle assessment and requirements for the project report according to EN 15804+A2:2019, version 1.0, 07-2020.

Product category rules for construction products**Part B**

EPD requirements for plastic and metal anchors, 10-2013.

IBU 2016

Institut Bauen und Umwelt e.V.: General EPD Programme Guidance of the Institut Bauen und

Umwelt e.V. (IBU). Version 1.1, Berlin: Institut Bauen und Umwelt e.V., 2016.
www.ibu-epd.com

Regulation (EU) No 305/2011

of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC Text with EEA relevance.

Regulation (EC) No 1272/2008

of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with EEA relevance.

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Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web www.ibu-epd.com

**Programme holder**

Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@ibu-epd.com
Web www.ibu-epd.com

brands & values[®]
sustainability consultants

**Author of the Life Cycle
Assessment**

brands & values GmbH
Altenwall 14
28195 Bremen
Germany

Tel +49 421 70 90 84 33
Fax +49 421 70 90 84 35
Mail info@brandsandvalues.com
Web www.brandsandvalues.com

EJOT[®]

Owner of the Declaration

EJOT Baubefestigungen GmbH
In der Stockwiese 35
57334 Bad Laasphe
Germany

Tel +49 2752 908-0
Fax +49 2752 908-731
Mail bau@ejot.de
Web www.ejot.de